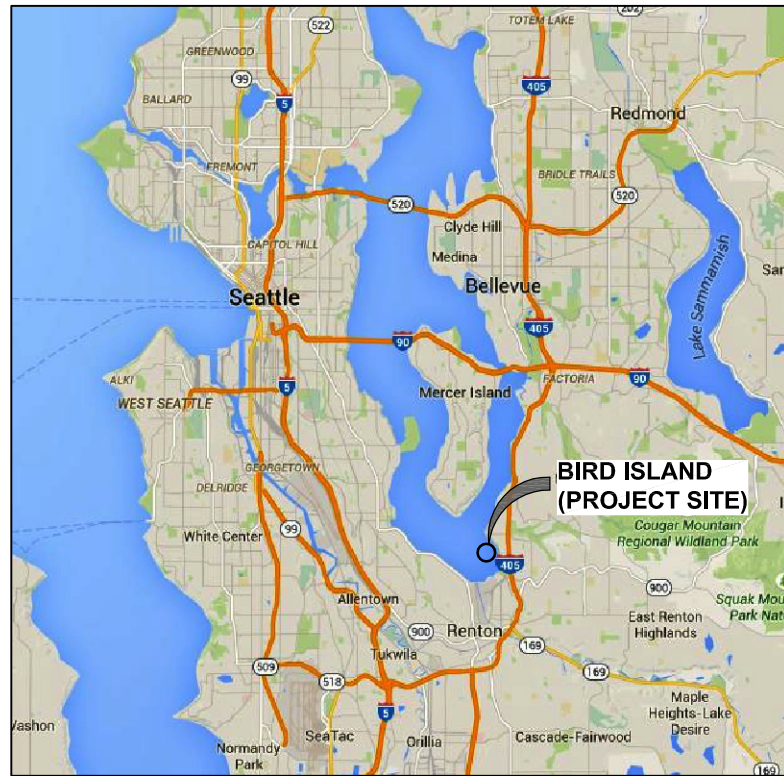


# BIRD ISLAND SHORELINE ENHANCEMENT PROJECT PHASE 1 - UPLAND WORK

OCTOBER 2016



VICINITY MAP



AERIAL PHOTO

SHEET INDEX	
TITLE	No.
TITLE SHEET AND INDEX	1
EXISTING CONDITIONS AND TEMPORARY EROSION & SEDIMENT PLAN	2
APS SITE SURVEY 1 of 2	3
APS SITE SURVEY 2 of 2	4
DEMOLITION PLAN	5
SITE KEY PLAN	6
PARTIAL SITE 1 PLAN	7
PARTIAL SITE 2 PLAN AND WATER SYSTEM DETAILS	8
BOARDWALK DETAILS	9
BOARDWALK DETAILS	10
EDUCATIONAL SIGNAGE DETAILS	11
PLANTING PLAN	12
PLANTING DETAILS	13

DIGITAL SIGNATURE:

THIS DRAWING SET WAS CREATED AS AN ELECTRONIC DOCUMENT. IF THE ELECTRONIC DOCUMENT DOES NOT INCLUDE A VERIFIABLE DIGITAL SIGNATURE IN THE BOX ABOVE, PLEASE CONTACT THE ENGINEER OF RECORD FOR THE ORIGINAL CERTIFIED ELECTRONIC DOCUMENT.

100% DESIGN

**P | N | D**  
ENGINEERS, INC.  
1736 Fourth Avenue S., Suite A  
Seattle, Washington 98134  
P: 206.624.1387  
www.pndengineers.com



PND ENGINEERS, INC. IS NOT RESPONSIBLE FOR SAFETY PROGRAMS, METHODS OR PROCEDURES OF OPERATION, OR THE CONSTRUCTION OF THE DESIGN SHOWN ON THESE DRAWINGS. WHERE SPECIFICATIONS ARE GENERAL OR NOT CALLED OUT, THE SPECIFICATIONS SHALL CONFORM TO STANDARDS OF INDUSTRY. DRAWINGS ARE FOR USE ON THIS PROJECT ONLY AND ARE NOT INTENDED FOR REUSE WITHOUT WRITTEN APPROVAL FROM PND. DRAWINGS ARE ALSO NOT TO BE USED IN ANY MANNER THAT WOULD CONSTITUTE A DETRIMENT DIRECTLY OR INDIRECTLY TO PND.



10-18-2016

REVISIONS		
REV	DATE	DESCRIPTION

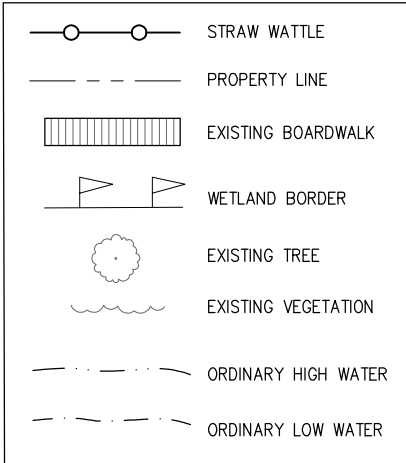
**BIRD ISLAND SHORELINE ENHANCEMENT  
PROJECT PHASE 1 - UPLAND WORK**

TITLE:  
**TITLE SHEET AND INDEX**

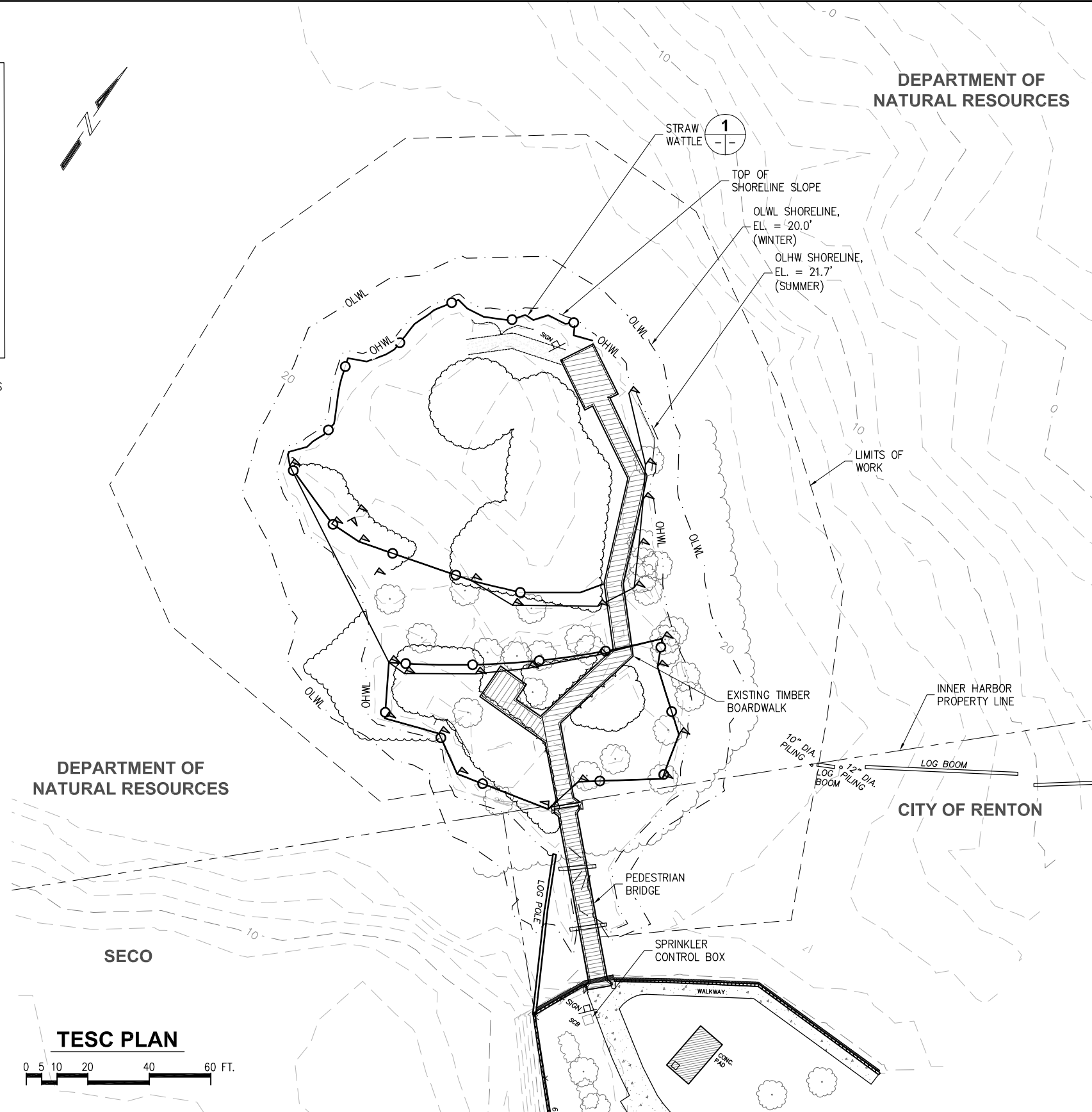
DESIGNED BY:	AD	PROJECT NO:	154031.01	SHEET NO:	1 OF 13
DRAWN BY:	DM	DATE:	OCTOBER 2016		
CHECKED BY:	SR	SCALE:	NOTED		

10/18/16\_DMCDONALD K:\2016\154031 - BIRD ISLAND\UPLAND - 100% DESIGN\154031.01-01\_COVER SHEET.DWG

**LEGEND**

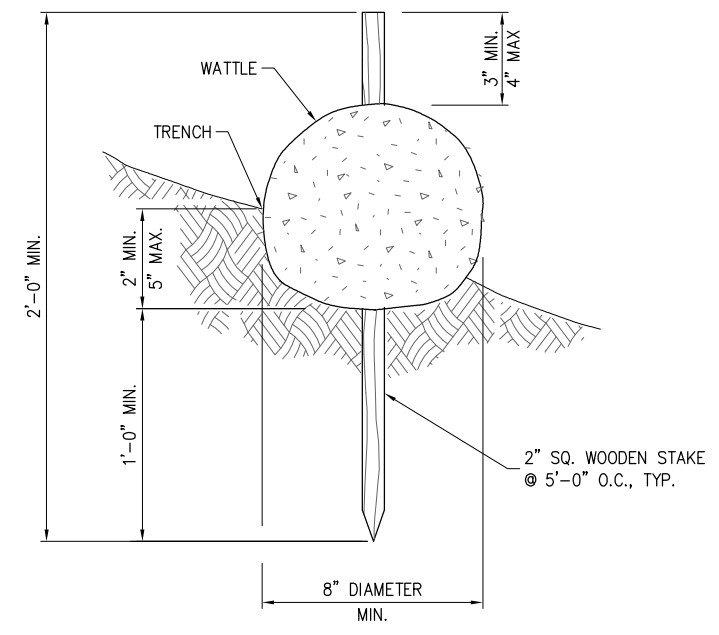


NOTE:  
NORTHINGS, EASTINGS, AND EXISTING ELEVATIONS  
RECEIVED FROM SURVEY BY APS, JUNE 2015.  
SEE SHEETS 3 AND 4.



**EROSION, SEDIMENT AND CONTAMINATION CONTROL NOTES**

- 1) THE IMPLEMENTATION OF THESE TESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT AND UPGRADING OF THESE TEMPORARY EROSION SEDIMENT CONTROL PLANS (TESC) AND FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS APPROVED.
- 2) THE TESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED PRIOR TO OR IN CONJUNCTION WITH ALL CLEARING AND GRADING TO ENSURE THAT THE TRANSPORT OF SEDIMENT TO SURFACE WATERS, DRAINAGE SYSTEMS, AND ADJACENT PROPERTIES IS MINIMIZED.
- 3) THE TESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE TESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND MODIFIED TO ACCOUNT FOR CHANGING SITE CONDITIONS (E.G., ADDITIONAL SUMP PUMPS, RELOCATION OF DITCHES AND SILT FENCES, ETC.).
- 4) THE TESC FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED TO ENSURE CONTINUED PROPER FUNCTIONING. WRITTEN RECORDS SHALL BE KEPT OF WEEKLY REVIEWS OF THE TESC FACILITIES DURING THE WET SEASON.
- 5) ANY AREAS OF EXPOSED SOILS THAT WILL NOT BE DISTURBED FOR TWO DAYS DURING THE WET SEASON OR SEVEN DAYS DURING THE DRY SEASON SHALL BE IMMEDIATELY STABILIZED WITH THE APPROVED TESC METHODS (E.G., MULCHING, PLASTIC COVERING, ETC.).
- 6) ANY AREA NEEDING TESC MEASURES NOT REQUIRING IMMEDIATE ATTENTION SHALL BE ADDRESSED WITHIN FIFTEEN (15) DAYS.
- 7) THE TESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN FORTY-EIGHT (48) HOURS FOLLOWING A STORM EVENT.
- 8) DURING THE PERIOD OF NOVEMBER 1 THROUGH MARCH 31, ALL PROJECT DISTURBED AREAS GREATER THAN 5,000 SQUARE FEET AND WHERE NO FURTHER WORK IS ANTICIPATED FOR A PERIOD OF FIFTEEN (15) DAYS, SHALL BE COVERED BY ONE OF THE FOLLOWING COVER MEASURES: MULCH OR PLASTIC COVERING.



**1 STRAW WATTLE**  
NOT TO SCALE

**100% DESIGN**

**BIRD ISLAND SHORELINE ENHANCEMENT PROJECT PHASE 1 - UPLAND WORK**

TITLE: **EXISTING CONDITIONS AND TEMPORARY EROSION & SEDIMENT PLAN**

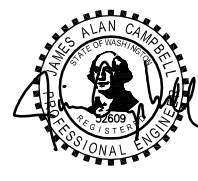
DESIGNED BY: AD	PROJECT NO: 154031.01	SHEET NO:
DRAWN BY: DM	DATE: OCTOBER 2016	<b>2 OF 13</b>
CHECKED BY: SR	SCALE: NOTED	

REVISIONS		
REV	DATE	DESCRIPTION

PND ENGINEERS, INC. IS NOT RESPONSIBLE FOR SAFETY PROGRAMS, METHODS OR PROCEDURES OF OPERATION, OR THE CONSTRUCTION OF THE DESIGN SHOWN ON THESE DRAWINGS. WHERE SPECIFICATIONS ARE GENERAL OR NOT CALLED OUT, THE SPECIFICATIONS SHALL CONFORM TO STANDARDS OF INDUSTRY. DRAWINGS ARE FOR USE ON THIS PROJECT ONLY AND ARE NOT INTENDED FOR REUSE WITHOUT WRITTEN APPROVAL FROM PND. DRAWINGS ARE ALSO NOT TO BE USED IN ANY MANNER THAT WOULD CONSTITUTE A DETRIMENT DIRECTLY OR INDIRECTLY TO PND.



**PND ENGINEERS, INC.**  
1736 Fourth Avenue S., Suite A  
Seattle, Washington 98134  
P: 206.624.1387  
www.pndengineers.com

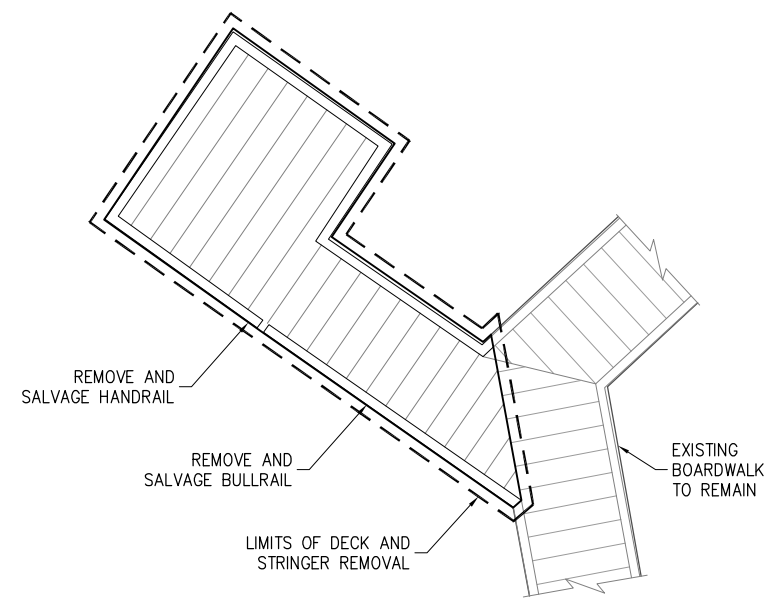
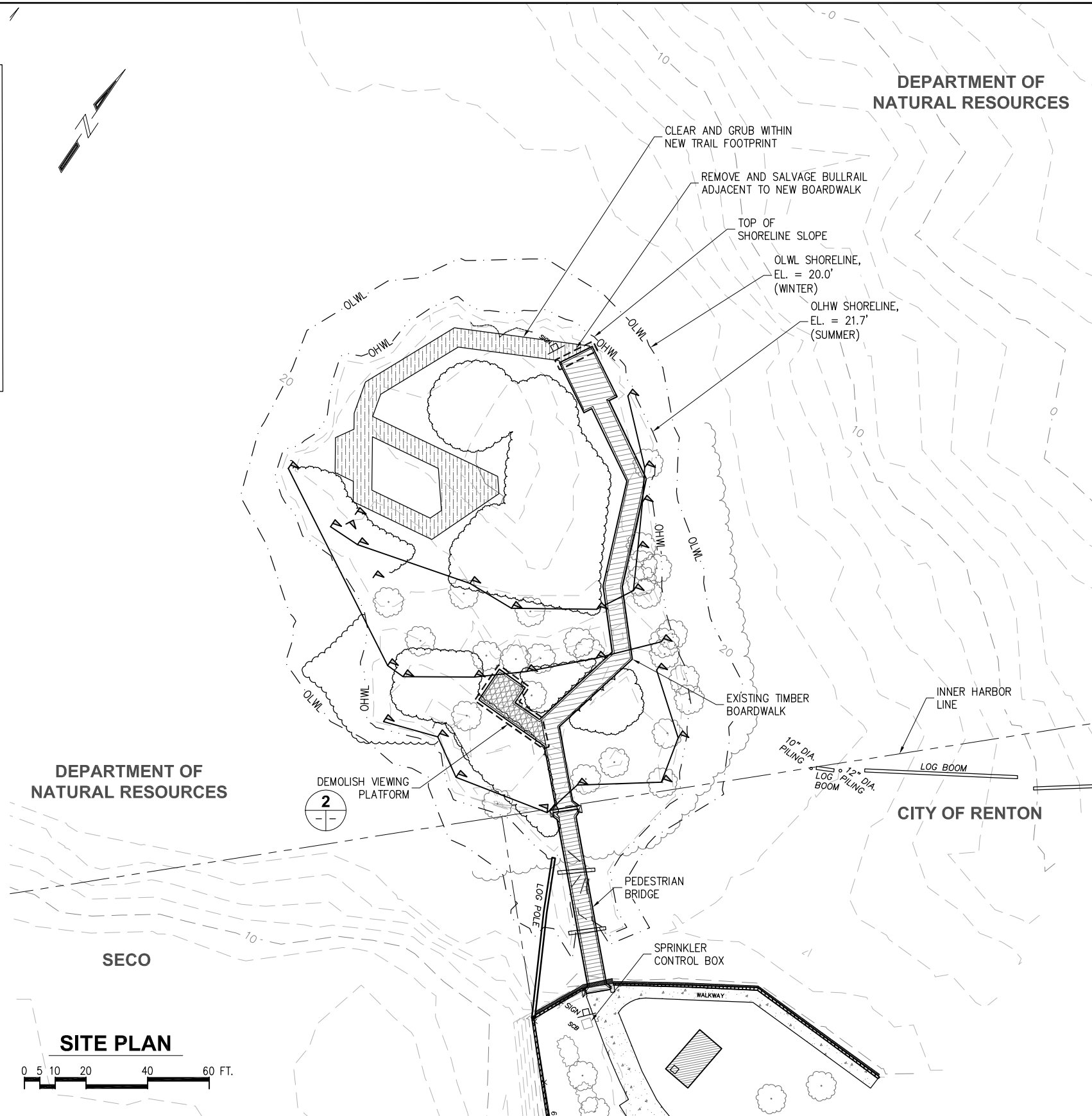


10/17/16 - DMCDONALD - 100% DESIGN - 154031.01-02 - TESC PLAN.DWG

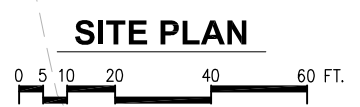
**LEGEND**

	CLEARING & GRUBBING
	AREA TO BE CLEARED/DEMOLISHED
	EXISTING BOARDWALK
	EXISTING VEGETATION
	EXISTING TREE
	WETLAND BORDER
	PROPERTY LINE
	CONTOUR LINE
	ORDINARY HIGH WATER
	ORDINARY LOW WATER

NOTE:  
NORTHINGS, EASTINGS, AND EXISTING ELEVATIONS  
RECEIVED FROM SURVEY BY APS, JUNE 2015.  
SEE SHEETS 3 AND 4.



**2 VIEWING PLATFORM DETAIL**



DEPARTMENT OF  
NATURAL RESOURCES

CITY OF RENTON

SECO

100% DESIGN

**BIRD ISLAND SHORELINE ENHANCEMENT  
PROJECT PHASE 1 - UPLAND WORK**

**DEMOLITION PLAN**

DESIGNED BY:	AD	PROJECT NO:	154031.01	SHEET NO:	
DRAWN BY:	DM	DATE:	OCTOBER 2016		
CHECKED BY:	SR	SCALE:	NOTED		

**5 OF 13**

10/18/16 DMCDONALD K:\2015\154031 - BIRD ISLAND\UPLAND - 100% DESIGN\154031.01-05- DEMOLITION PLAN.DWG

**PND ENGINEERS, INC.**  
1736 Fourth Avenue S., Suite A  
Seattle, Washington 98134  
P: 206.624.1387  
www.pndengineers.com



PND ENGINEERS, INC. IS NOT RESPONSIBLE FOR SAFETY PROGRAMS, METHODS OR PROCEDURES OF OPERATION, OR THE CONSTRUCTION OF THE DESIGN SHOWN ON THESE DRAWINGS. WHERE SPECIFICATIONS ARE GENERAL OR NOT CALLED OUT, THE SPECIFICATIONS SHALL CONFORM TO STANDARDS OF INDUSTRY. DRAWINGS ARE FOR USE ON THIS PROJECT ONLY AND ARE NOT INTENDED FOR REUSE WITHOUT WRITTEN APPROVAL FROM PND. DRAWINGS ARE ALSO NOT TO BE USED IN ANY MANNER THAT WOULD CONSTITUTE A DETRIMENT DIRECTLY OR INDIRECTLY TO PND.

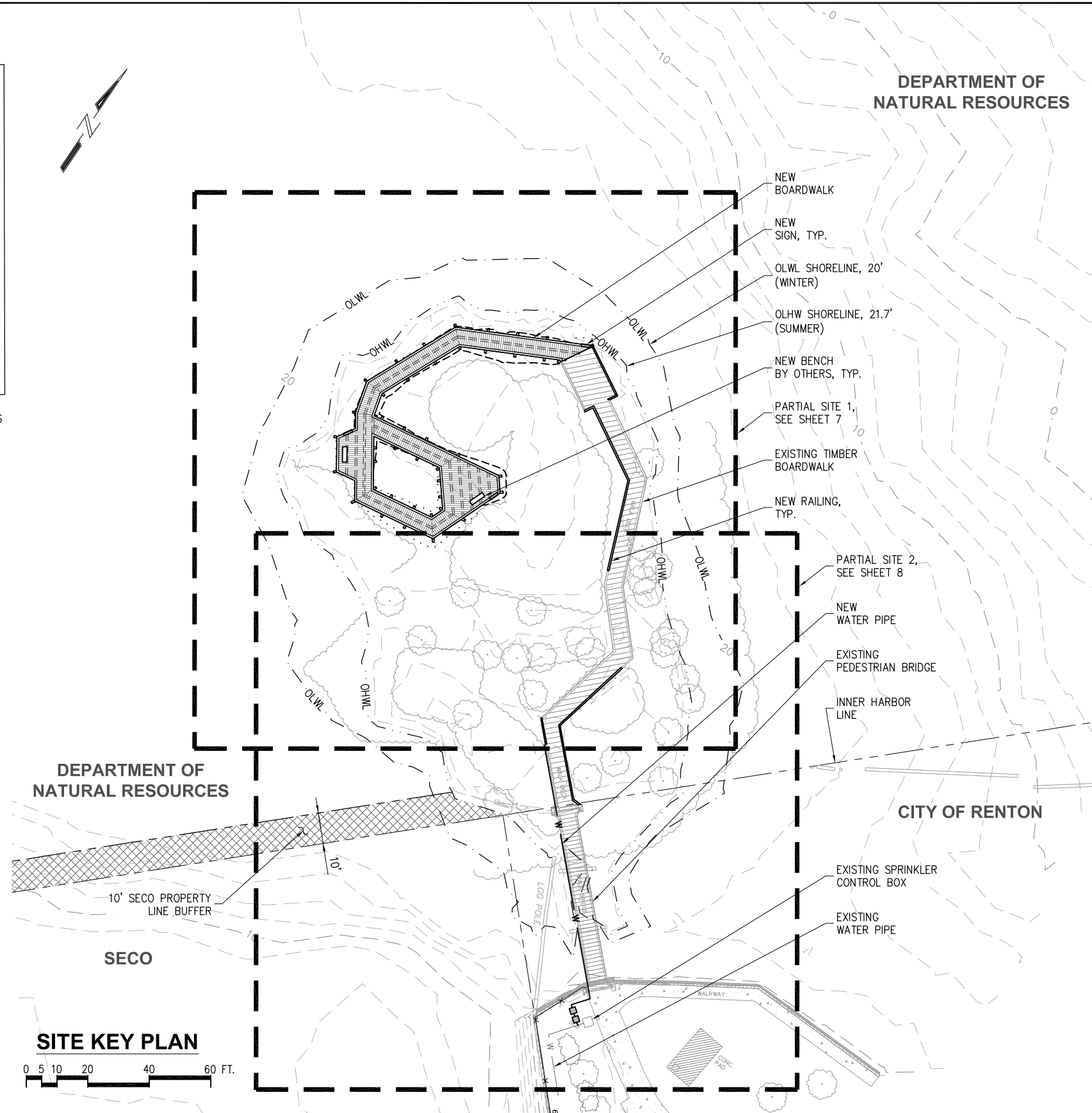


REVISIONS		
REV	DATE	DESCRIPTION

**LEGEND**

	NEW WATER PIPE
	NEW RAILING
	NEW BOARDWALK
	EXISTING BOARDWALK
	EXISTING VEGETATION
	EXISTING TREE
	PROPERTY LINE
	CONTOUR LINE
	ORDINARY HIGH WATER
	ORDINARY LOW WATER

NOTE:  
NORTHINGS, EASTINGS, AND EXISTING ELEVATIONS  
RECEIVED FROM SURVEY BY APS, JUNE 2015.  
SEE SHEETS 3 AND 4.



DEPARTMENT OF  
NATURAL RESOURCES

DEPARTMENT OF  
NATURAL RESOURCES

CITY OF RENTON

SECO

**SITE KEY PLAN**



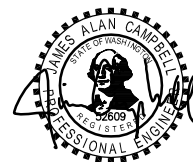
100% DESIGN

**BIRD ISLAND SHORELINE ENHANCEMENT  
PROJECT PHASE 1 - UPLAND WORK**

TITLE: <b>SITE KEY PLAN</b>			
DESIGNED BY:	AD	PROJECT NO:	154031.01
DRAWN BY:	DM	DATE:	OCTOBER 2016
CHECKED BY:	SR	SCALE:	NOTED
SHEET NO:		<b>6 OF 13</b>	

REVISIONS		
REV	DATE	DESCRIPTION

PND ENGINEERS, INC. IS NOT RESPONSIBLE FOR SAFETY PROGRAMS, METHODS OR PROCEDURES OF OPERATION, OR THE CONSTRUCTION OF THE DESIGN SHOWN ON THESE DRAWINGS. WHERE SPECIFICATIONS ARE GENERAL OR NOT CALLED OUT, THE SPECIFICATIONS SHALL CONFORM TO STANDARDS OF INDUSTRY. DRAWINGS ARE FOR USE ON THIS PROJECT ONLY AND ARE NOT INTENDED FOR REUSE WITHOUT WRITTEN APPROVAL FROM PND. DRAWINGS ARE ALSO NOT TO BE USED IN ANY MANNER THAT WOULD CONSTITUTE A DETRIMENT DIRECTLY OR INDIRECTLY TO PND.



10-18-2016

10/17/16 - DMCDONALD - BIRD ISLAND UPLAND - 100% DESIGN - 154031.01-06 - SITE KEY PLAN.DWG

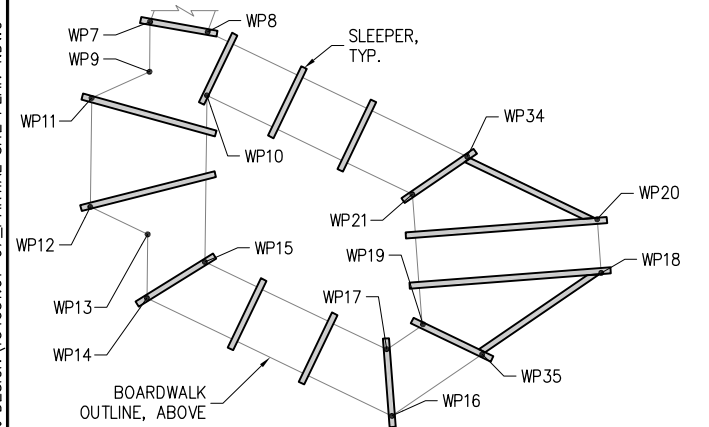
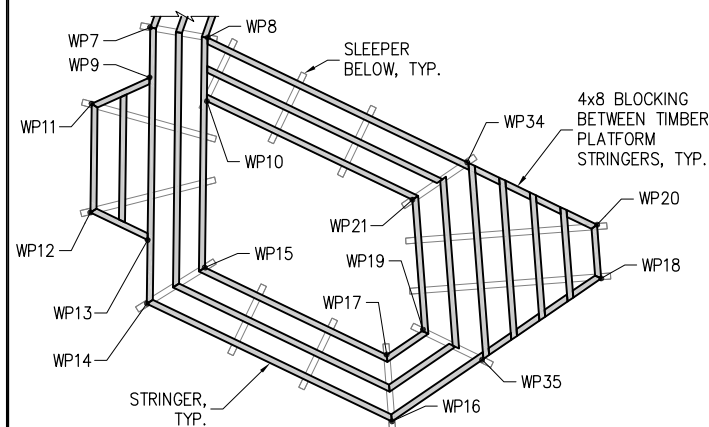


1736 Fourth Avenue S., Suite A  
Seattle, Washington 98134  
P: 206.624.1387  
www.pndengineers.com

**LEGEND**

	CUT
	FILL
	NEW RAILING
	NEW BOARDWALK
	EXISTING BOARDWALK
	EXISTING VEGETATION
	EXISTING TREE
	PROPERTY LINE
	CONTOUR LINE
	ORDINARY HIGH WATER
	ORDINARY LOW WATER

NOTE:  
NORTHINGS, EASTINGS, AND EXISTING ELEVATIONS RECEIVED  
FROM SURVEY BY APS, JUNE 2015. SEE SHEETS 3 AND 4.



**STRINGER AND SLEEPER DETAIL**

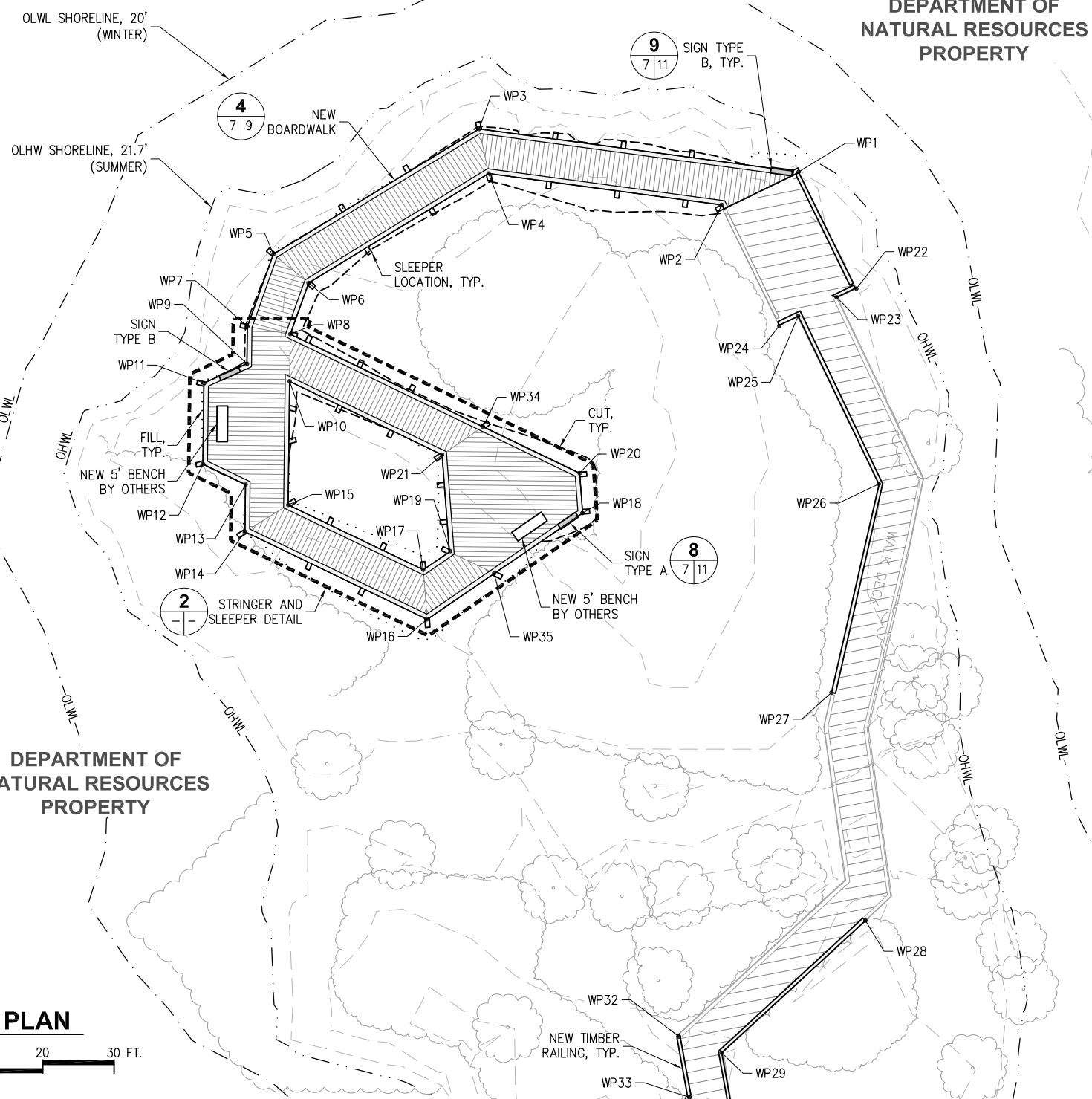


**SITE PLAN**



DEPARTMENT OF  
NATURAL RESOURCES  
PROPERTY

DEPARTMENT OF  
NATURAL RESOURCES  
PROPERTY



**WORK POINT TABLE**

POINT	NORTHING (FT)	EASTING (FT)	EXISTING ELEVATION (FT)	PROPOSED ELEVATION (FT)	BASE PLATE TYPE
1	187147.20	1301295.64	25.35	23.7	STANDARD
2	187137.33	1301289.32	25.59	23.7	STANDARD
3	187127.03	1301255.21	24.63	24.0	5
4	187122.61	1301259.79	24.97	24.0	5
5	187096.29	1301241.20	24.26	24.6	5
6	187095.73	1301247.54	24.60	24.6	5
7	187085.86	1301243.90	25.26	24.9	6
8	187088.33	1301249.46	24.90	24.9	4
9	187081.51	1301246.77	25.32	24.9	2
10	187082.83	1301253.09	25.91	24.9	3
11	187075.87	1301243.31	24.58	24.9	2
12	187066.41	1301249.58	24.89	24.9	2
13	187067.40	1301256.11	24.87	24.9	2
14	187061.88	1301259.77	24.63	24.9	2
15	187068.38	1301262.66	24.51	24.9	2
16	187066.07	1301287.77	24.04	26.6	1
17	187071.49	1301283.45	24.66	26.6	1
18	187090.62	1301297.44	28.82	26.9	1
19	187075.63	1301285.08	25.35	26.9	1
20	187095.01	1301293.95	29.12	26.9	1
21	187086.34	1301276.56	26.75	26.9	1
22	187138.22	1301311.53	24.56	N/A	EXISTING
23	187135.66	1301309.91	24.65	N/A	EXISTING
24	187127.82	1301305.51	24.60	N/A	EXISTING
25	187130.45	1301306.93	24.51	N/A	EXISTING
26	187117.33	1301329.51	24.09	N/A	EXISTING
27	187089.41	1301340.44	25.52	N/A	EXISTING
28	187065.64	1301362.34	25.71	N/A	EXISTING
29	187038.97	1301356.07	24.47	N/A	EXISTING
30	2244259.75	15616478.89	24.53	N/A	EXISTING
31	2244258.50	15616512.19	23.86	N/A	EXISTING
32	2244449.82	15616198.39	23.68	N/A	EXISTING
33	2244375.32	15616270.48	24.29	N/A	EXISTING
34	2245109.80	15615347.81	27.54	26.9	STANDARD
35	2244918.85	15615499.25	25.22	26.9	STANDARD

100% DESIGN

**BIRD ISLAND SHORELINE ENHANCEMENT  
PROJECT PHASE 1 - UPLAND WORK**

TITLE: <b>PARTIAL SITE 1 PLAN</b>			
DESIGNED BY:	AD	PROJECT NO:	154031.01
DRAWN BY:	DM	DATE:	OCTOBER 2016
CHECKED BY:	SR	SCALE:	NOTED
SHEET NO:			<b>7 OF 13</b>

10/18/16\_DMCDONALD K:\2015\154031 - BIRD ISLAND\UPLAND - 100% DESIGN\154031.01-07\_PARTIAL SITE PLAN 1.DWG

1736 Fourth Avenue S., Suite A  
Seattle, Washington 98134  
P: 206.624.1387  
www.pndengineers.com



PND ENGINEERS, INC. IS NOT RESPONSIBLE FOR SAFETY PROGRAMS, METHODS OR PROCEDURES OF OPERATION, OR THE CONSTRUCTION OF THE DESIGN SHOWN ON THESE DRAWINGS. WHERE SPECIFICATIONS ARE GENERAL OR NOT CALLED OUT, THE SPECIFICATIONS SHALL CONFORM TO STANDARDS OF INDUSTRY. DRAWINGS ARE FOR USE ON THIS PROJECT ONLY AND ARE NOT INTENDED FOR REUSE WITHOUT WRITTEN APPROVAL FROM PND. DRAWINGS ARE ALSO NOT TO BE USED IN ANY MANNER THAT WOULD CONSTITUTE A DETRIMENT DIRECTLY OR INDIRECTLY TO PND.

JAMES ALAN CAMPBELL  
PROFESSIONAL ENGINEER  
10-18-2016

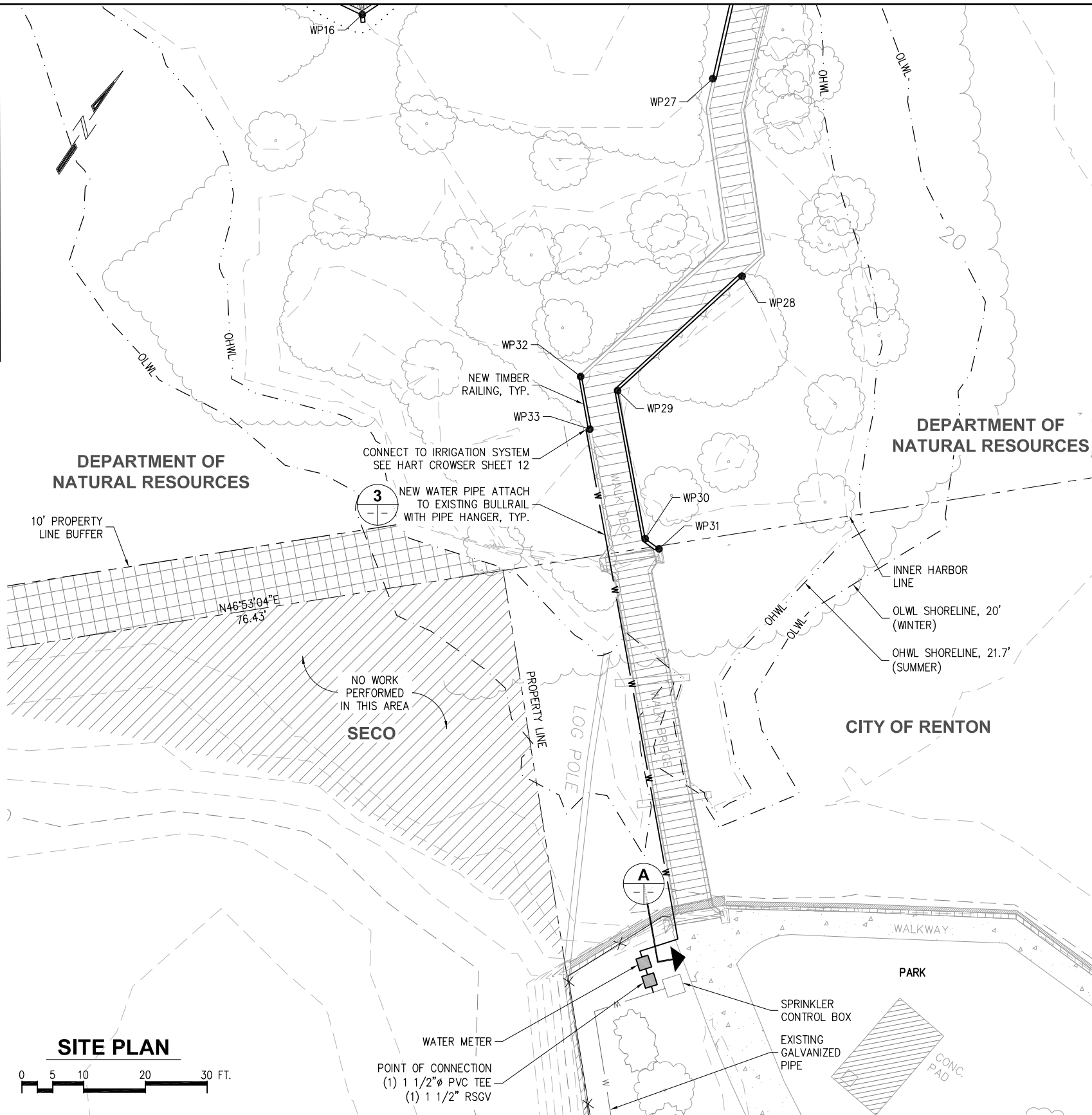
REV	DATE	DESCRIPTION

10/18/16.DMCDONALD  
K:\2015\154031 - BIRD ISLAND\UPLAND - 100% DESIGN\154031.01-08.PARTIAL SITE PLAN 2.DWG

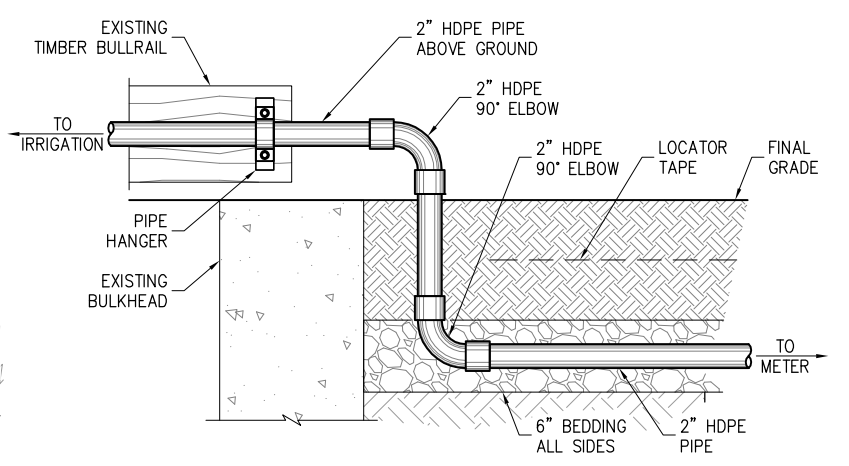
**LEGEND**

	NEW WATER PIPE
	NEW RAILING
	EXISTING BOARDWALK
	EXISTING VEGETATION
	EXISTING TREE
	PROPERTY LINE
	CONTOUR LINE
	ORDINARY HIGH WATER
	ORDINARY LOW WATER

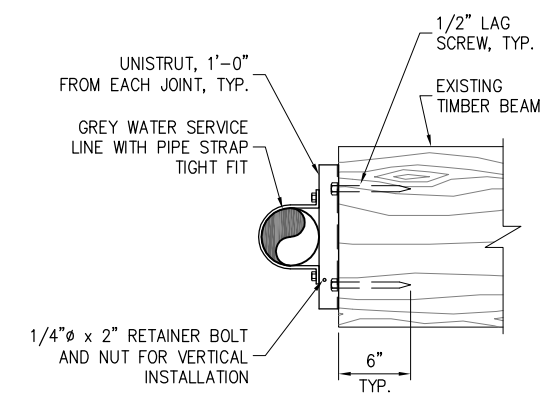
NOTE:  
NORTHINGS, EASTINGS, AND EXISTING ELEVATIONS  
RECEIVED FROM SURVEY BY APS, JUNE 2015.  
SEE SHEETS 3 AND 4.



**SITE PLAN**



**A SECTION**



**3 PIPE HANGER**

100% DESIGN

<b>BIRD ISLAND SHORELINE ENHANCEMENT PROJECT PHASE 1 - UPLAND WORK</b>			
TITLE: <b>PARTIAL SITE 2 PLAN AND WATER SYSTEM DETAILS</b>			
DESIGNED BY: AD	PROJECT NO: 154031.01	SHEET NO: 8 OF 13	
DRAWN BY: DM	DATE: OCTOBER 2016		
CHECKED BY: SR	SCALE: NOTED		

**PND ENGINEERS, INC.**  
1736 Fourth Avenue S., Suite A  
Seattle, Washington 98134  
P: 206.624.1387  
www.pndengineers.com

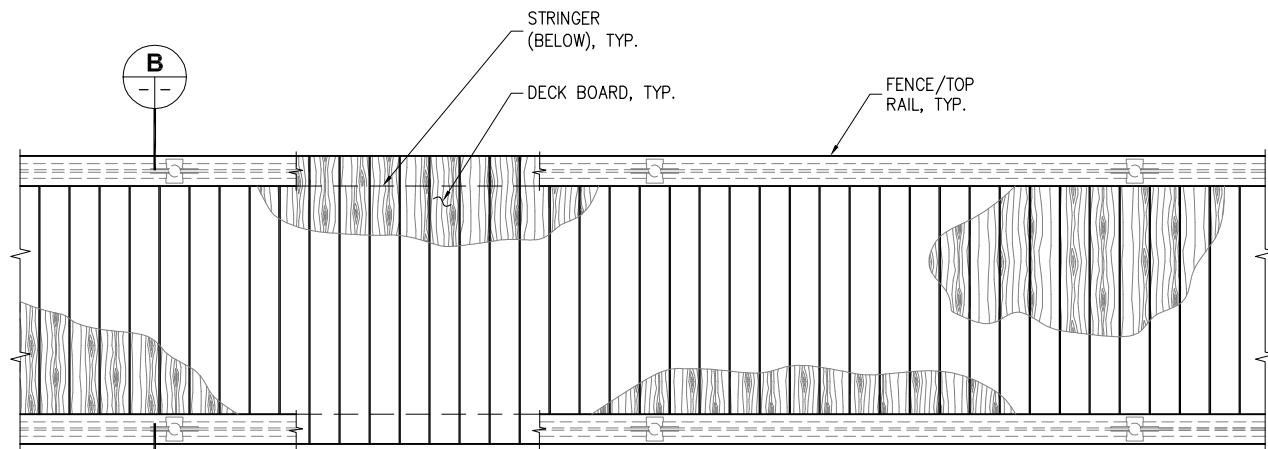


PND ENGINEERS, INC. IS NOT RESPONSIBLE FOR SAFETY PROGRAMS, METHODS OR PROCEDURES OF OPERATION, OR THE CONSTRUCTION OF THE DESIGN SHOWN ON THESE DRAWINGS. WHERE SPECIFICATIONS ARE GENERAL OR NOT CALLED OUT, THE SPECIFICATIONS SHALL CONFORM TO STANDARDS OF INDUSTRY. DRAWINGS ARE FOR USE ON THIS PROJECT ONLY AND ARE NOT INTENDED FOR REUSE WITHOUT WRITTEN APPROVAL FROM PND. DRAWINGS ARE ALSO NOT TO BE USED IN ANY MANNER THAT WOULD CONSTITUTE A DETRIMENT DIRECTLY OR INDIRECTLY TO PND.

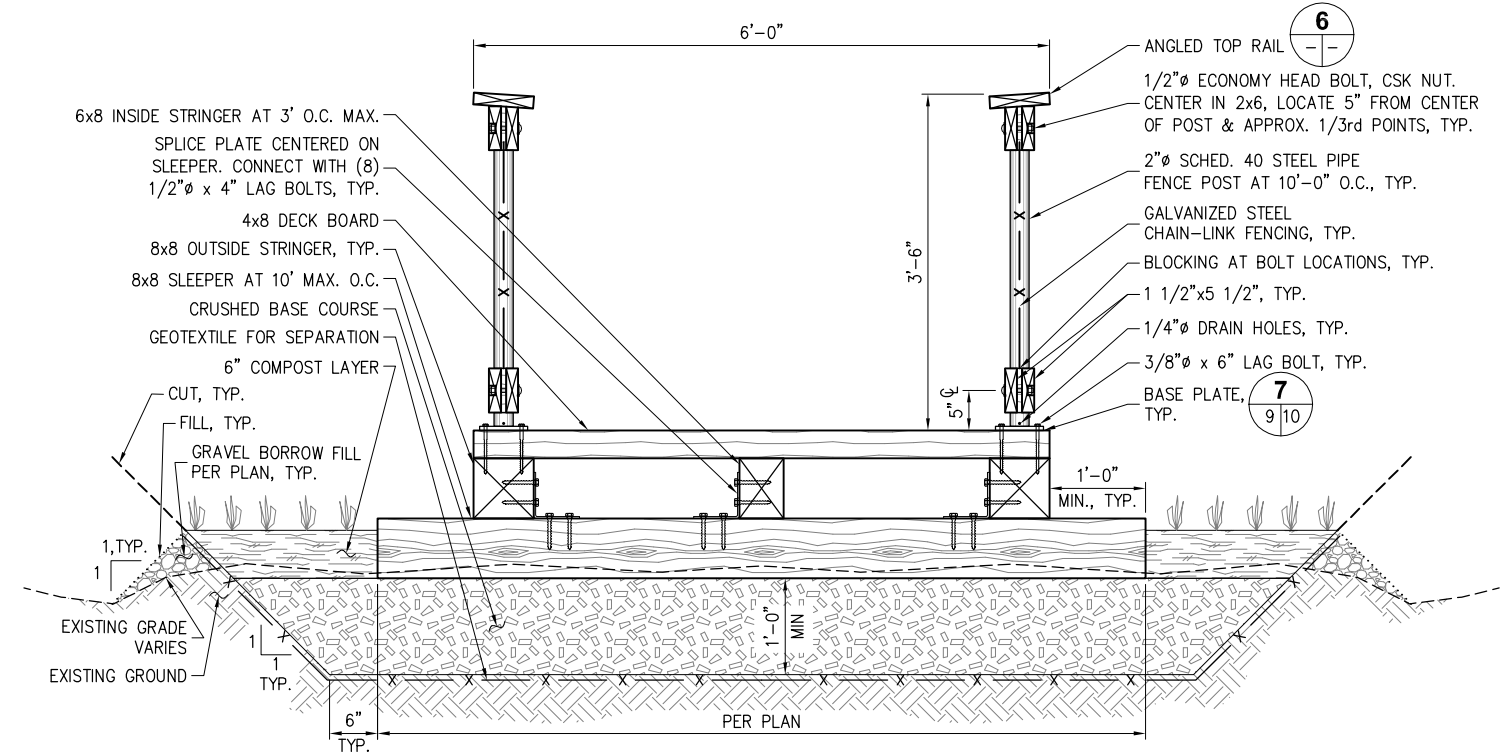


REVISIONS		
REV	DATE	DESCRIPTION

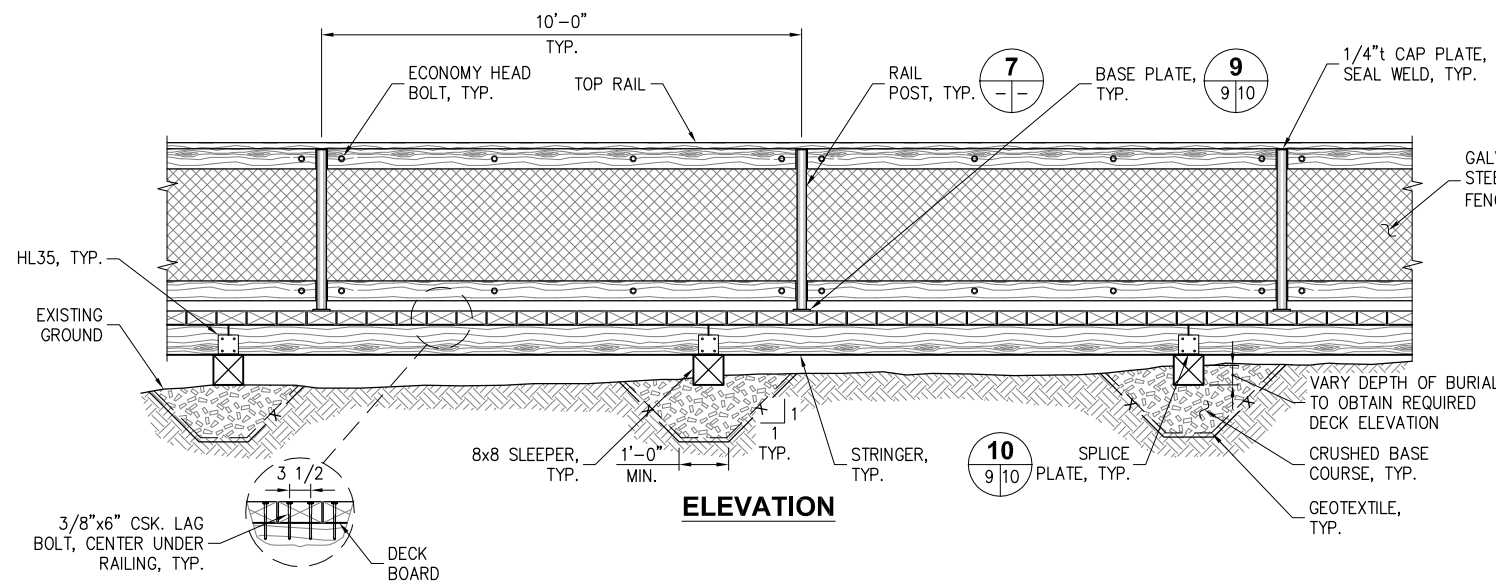
10/18/16.DMCDONALD  
K:\2015\154031 - BIRD ISLAND\UPLAND - 100% DESIGN\154031.01-09\_BOARDWALK\_DETAILS.DWG



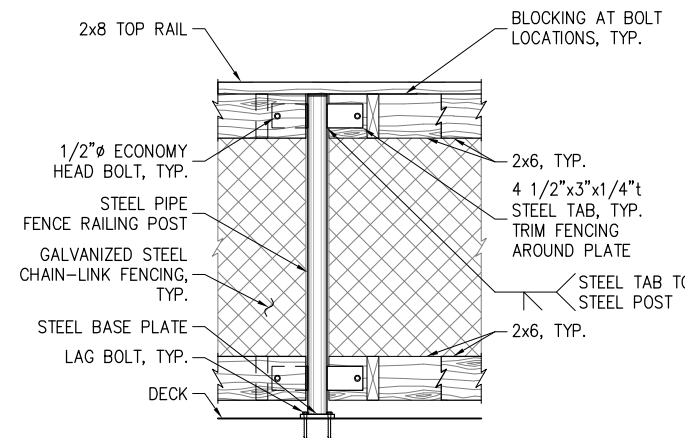
PLAN



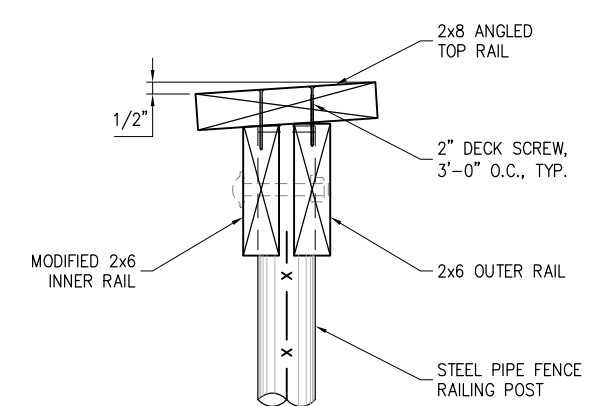
TYPICAL BOARDWALK SECTION  
SCALE: 1" = 1'-0"



ELEVATION



5 RAIL POST  
(RAILING TO POST CONNECTION)



6 ANGLED TOP RAIL

4 NEW BOARDWALK



1736 Fourth Avenue S., Suite A  
Seattle, Washington 98134  
P: 206.624.1387  
www.pndengineers.com



PND ENGINEERS, INC. IS NOT RESPONSIBLE FOR SAFETY PROGRAMS, METHODS OR PROCEDURES OF OPERATION, OR THE CONSTRUCTION OF THE DESIGN SHOWN ON THESE DRAWINGS. WHERE SPECIFICATIONS ARE GENERAL OR NOT CALLED OUT, THE SPECIFICATIONS SHALL CONFORM TO STANDARDS OF INDUSTRY. DRAWINGS ARE FOR USE ON THIS PROJECT ONLY AND ARE NOT INTENDED FOR REUSE WITHOUT WRITTEN APPROVAL FROM PND. DRAWINGS ARE ALSO NOT TO BE USED IN ANY MANNER THAT WOULD CONSTITUTE A DETRIMENT DIRECTLY OR INDIRECTLY TO PND.

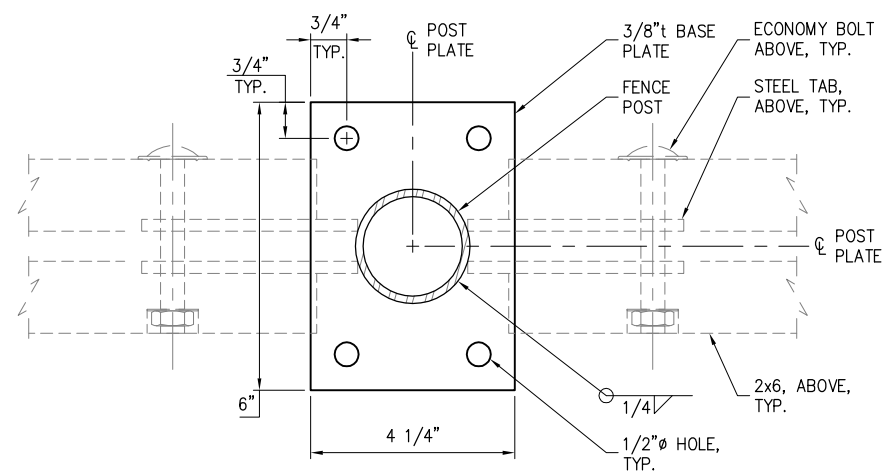


10-18-2016

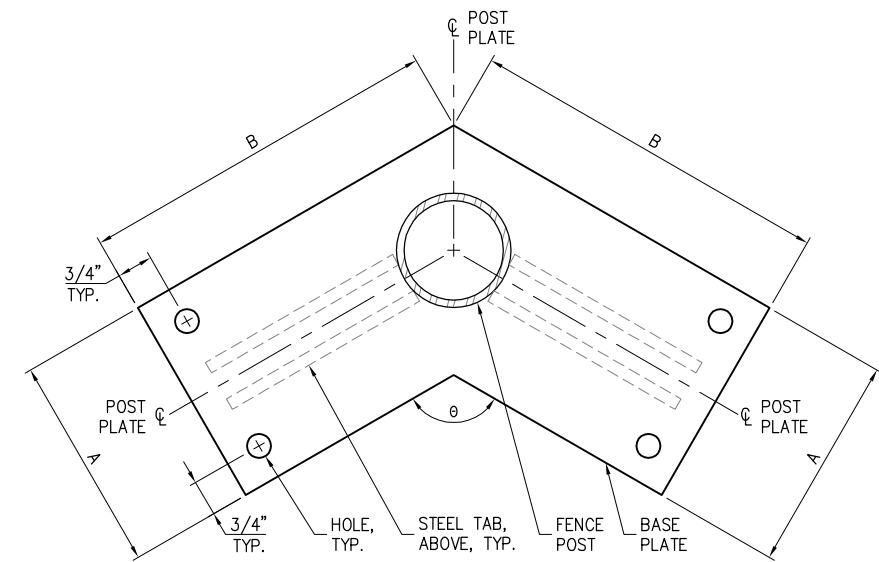
REVISIONS		
REV	DATE	DESCRIPTION

100% DESIGN			
BIRD ISLAND SHORELINE ENHANCEMENT PROJECT PHASE 1 - UPLAND WORK			
TITLE: BOARDWALK DETAILS			
DESIGNED BY:	AD	PROJECT NO:	154031.01
DRAWN BY:	DM	DATE:	OCTOBER 2016
CHECKED BY:	SR	SCALE:	NOTED
SHEET NO:			9 OF 13

10/18/16\_DMCDONALD K:\2015\154031 - BIRD ISLAND\UPLAND - 100% DESIGN\154031.01-10\_BOARDWALK\_DETAILS.DWG



**STANDARD**



**ANGLED**  
SEE STANDARD FOR  
INFORMATION NOT SHOWN.

**7 BASE PLATE**

BASE PLATE SCHEDULE				
BASE PLATE TYPE	'A' (IN.)	'B' (IN.)	θ (°)	QUANTITY
STANDARD	PER STANDARD DETAIL			28
ANGLED-1	6	8 1/2	120	6
ANGLED-2	6	9	115	6
ANGLED-3	6	14 1/2	64	1
ANGLED-4	6	1 1/4	97	1
ANGLED-5	6	7	141	4
ANGLED-6	6	6	161	1

100% DESIGN

**PND ENGINEERS, INC.**  
1736 Fourth Avenue S., Suite A  
Seattle, Washington 98134  
P: 206.624.1387  
www.pndengineers.com



PND ENGINEERS, INC. IS NOT RESPONSIBLE FOR SAFETY PROGRAMS, METHODS OR PROCEDURES OF OPERATION, OR THE CONSTRUCTION OF THE DESIGN SHOWN ON THESE DRAWINGS. WHERE SPECIFICATIONS ARE GENERAL OR NOT CALLED OUT, THE SPECIFICATIONS SHALL CONFORM TO STANDARDS OF INDUSTRY. DRAWINGS ARE FOR USE ON THIS PROJECT ONLY AND ARE NOT INTENDED FOR REUSE WITHOUT WRITTEN APPROVAL FROM PND. DRAWINGS ARE ALSO NOT TO BE USED IN ANY MANNER THAT WOULD CONSTITUTE A DETRIMENT DIRECTLY OR INDIRECTLY TO PND.



REVISIONS		
REV	DATE	DESCRIPTION

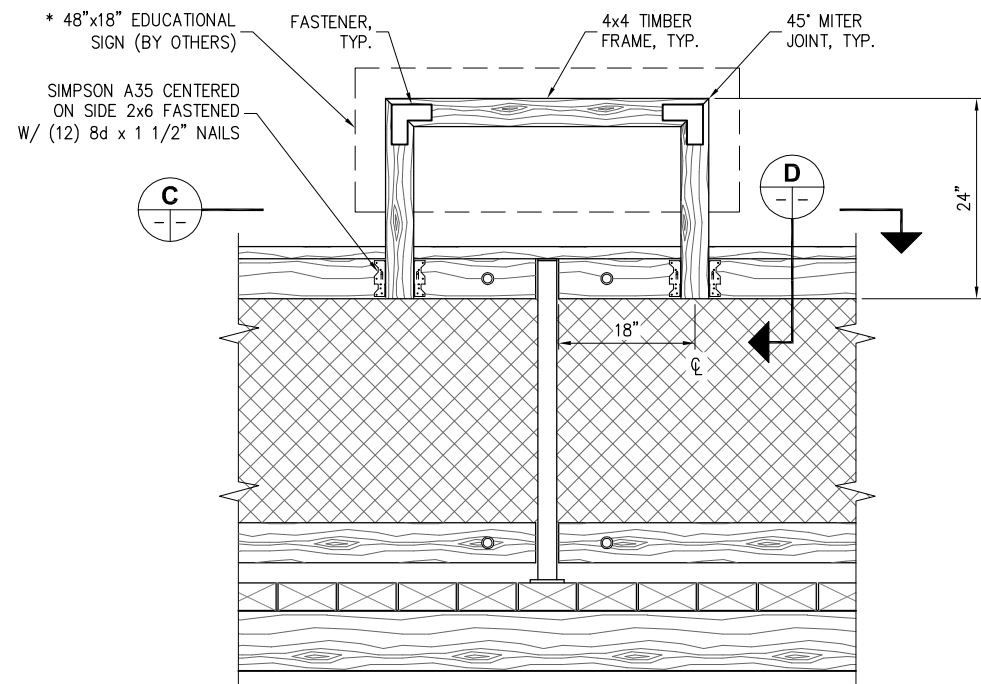
**BIRD ISLAND SHORELINE ENHANCEMENT PROJECT PHASE 1 - UPLAND WORK**

TITLE: **BOARDWALK DETAILS**

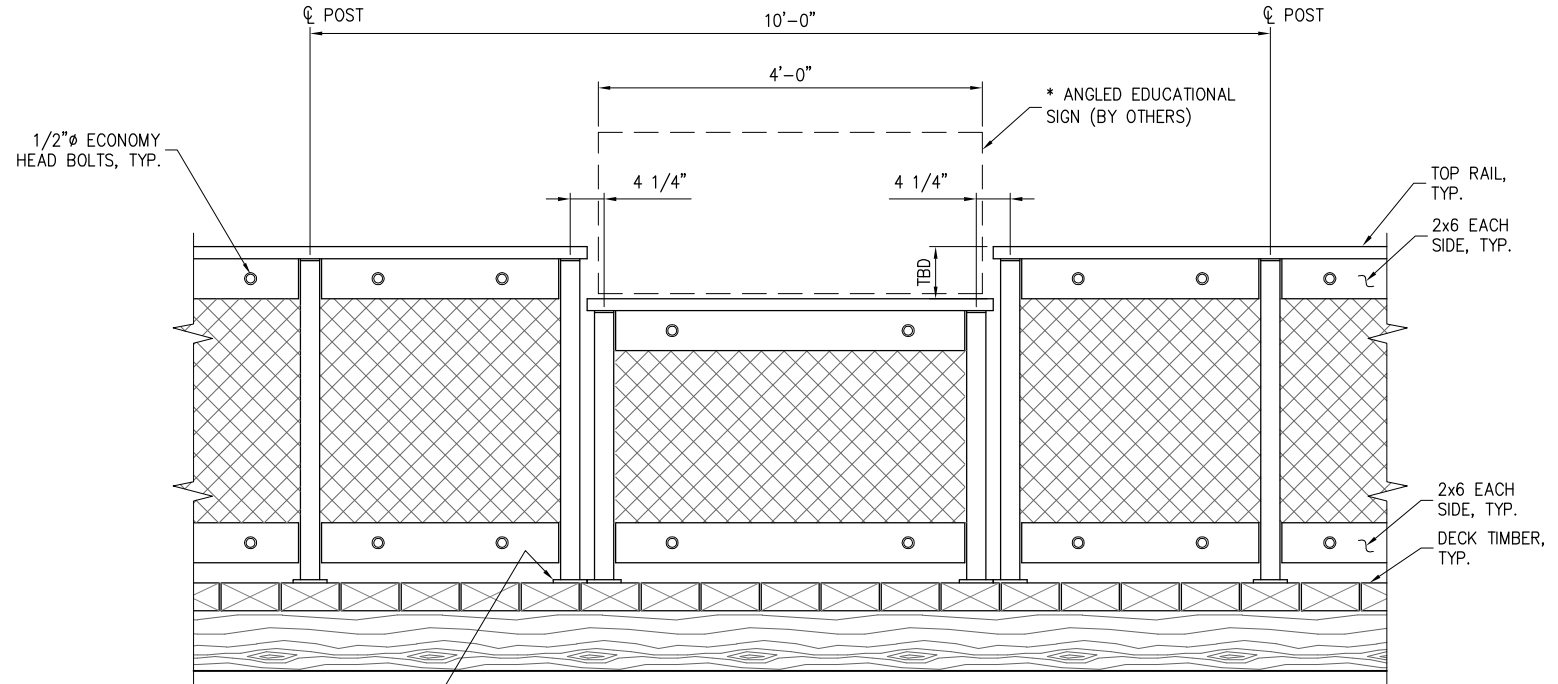
DESIGNED BY: AD	PROJECT NO: 154031.01	SHEET NO:
DRAWN BY: DM	DATE: OCTOBER 2016	<b>10 OF 13</b>
CHECKED BY: SR	SCALE: NOTED	



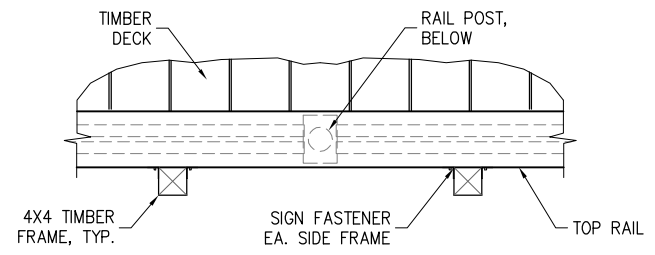
10/7/16\_DMCDONALD K:\2015\154031 - BIRD ISLAND\UPLAND - 100% DESIGN\154031.01-11\_EDUCATION SIGNAGE DETAILS.DWG



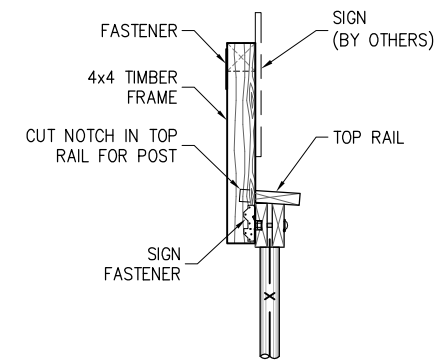
**ELEVATION**  
\* TEXT TO BE BETWEEN 40" - 70" FROM TOP OF DECK



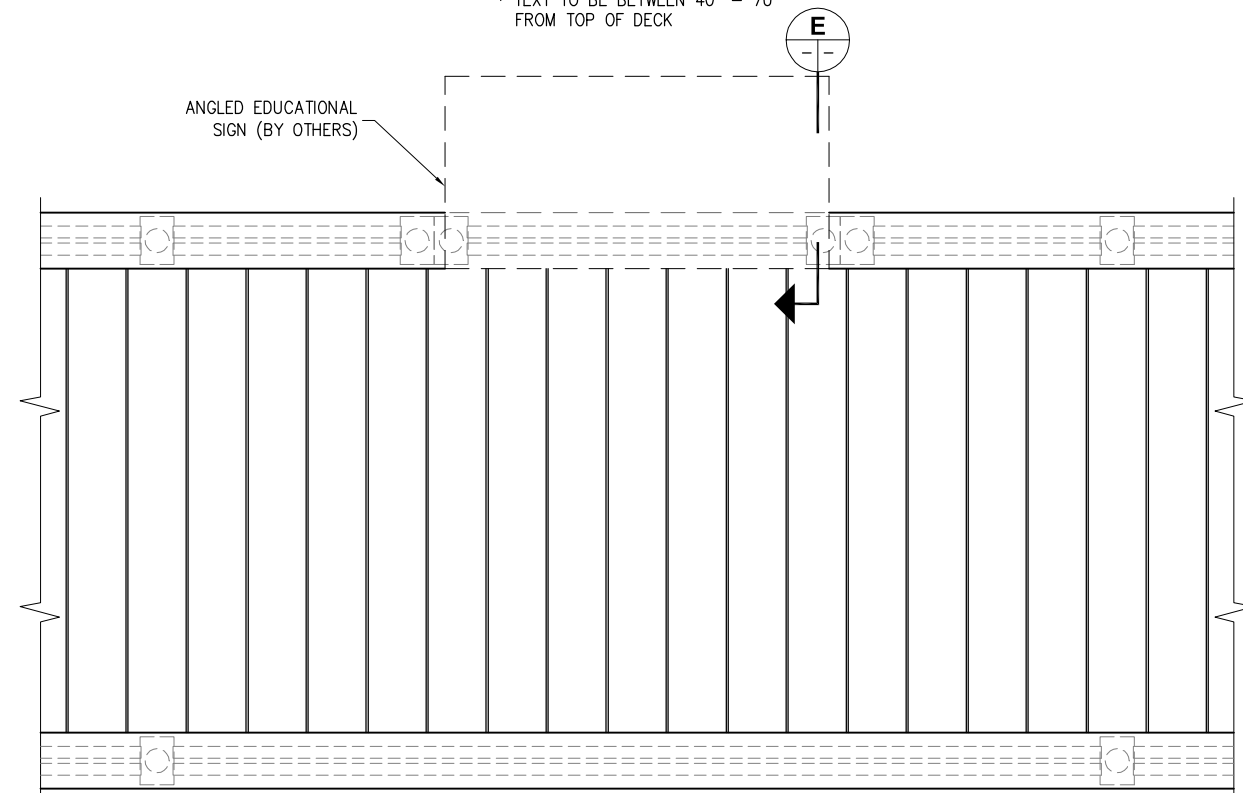
**ELEVATION**  
\* TEXT TO BE BETWEEN 40" - 70" FROM TOP OF DECK



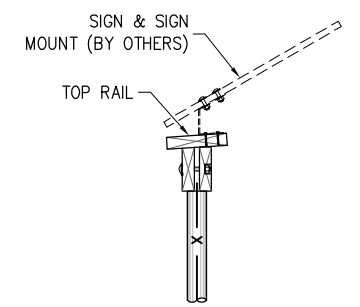
**C SECTION**



**D SECTION**



**PLAN**  
**SIGN TYPE B**



**E SECTION**

**8**  
**SIGN TYPE A**

**9**  
**SIGN TYPE B**

100% DESIGN

**PND ENGINEERS, INC.**  
1736 Fourth Avenue S., Suite A  
Seattle, Washington 98134  
P: 206.624.1387  
www.pndengineers.com



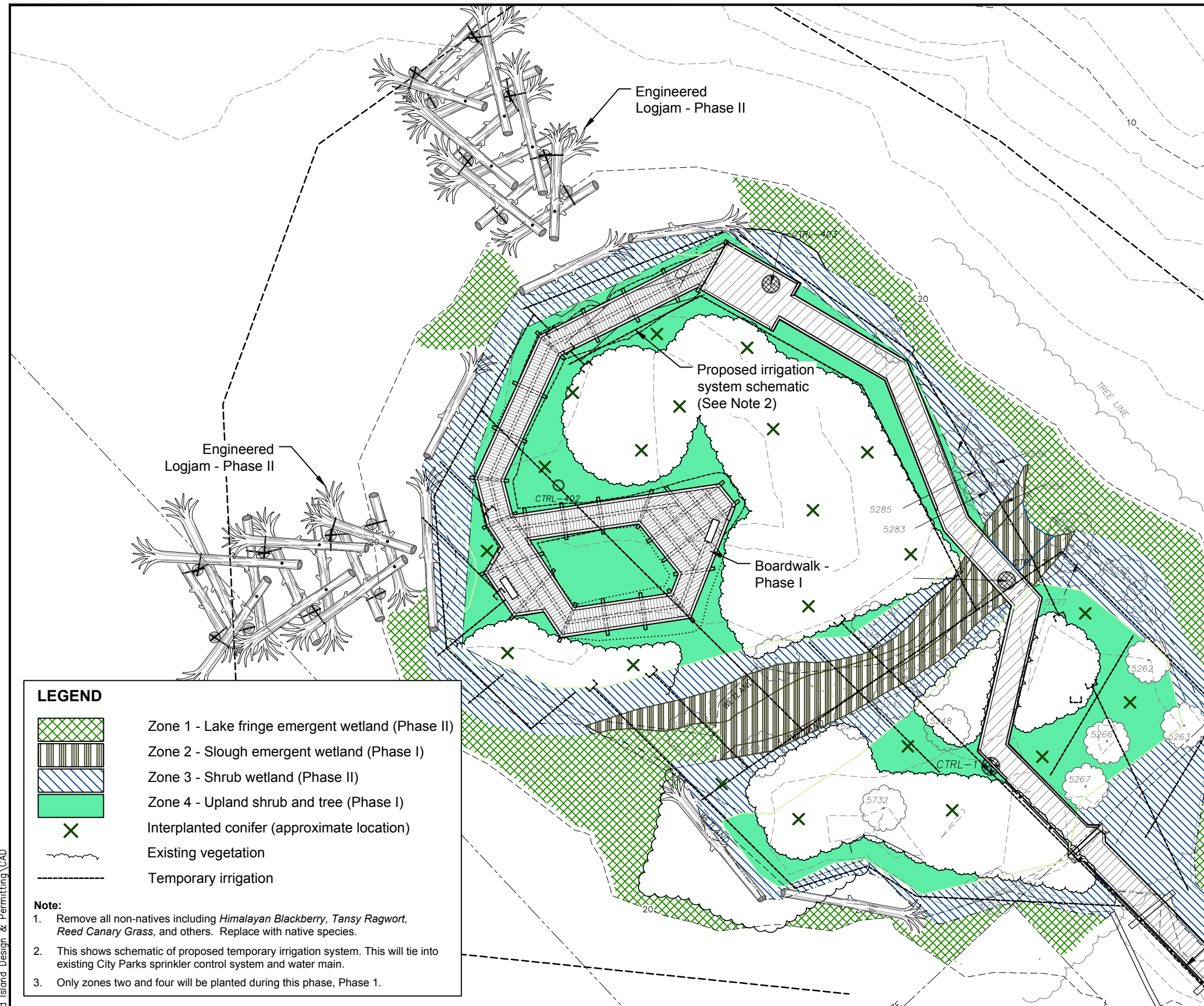
PND ENGINEERS, INC. IS NOT RESPONSIBLE FOR SAFETY PROGRAMS, METHODS OR PROCEDURES OF OPERATION, OR THE CONSTRUCTION OF THE DESIGN SHOWN ON THESE DRAWINGS. WHERE SPECIFICATIONS ARE GENERAL OR NOT CALLED OUT, THE SPECIFICATIONS SHALL CONFORM TO STANDARDS OF INDUSTRY. DRAWINGS ARE FOR USE ON THIS PROJECT ONLY AND ARE NOT INTENDED FOR REUSE WITHOUT WRITTEN APPROVAL FROM PND. DRAWINGS ARE ALSO NOT TO BE USED IN ANY MANNER THAT WOULD CONSTITUTE A DETRIMENT DIRECTLY OR INDIRECTLY TO PND.



REVISIONS		
REV	DATE	DESCRIPTION

<b>BIRD ISLAND SHORELINE ENHANCEMENT PROJECT PHASE 1 - UPLAND WORK</b>			
TITLE: <b>EDUCATIONAL SIGNAGE DETAILS</b>			
DESIGNED BY: AD	PROJECT NO: 154031.01	SHEET NO: 11 OF 13	
DRAWN BY: DM	DATE: OCTOBER 2016		
CHECKED BY: SR	SCALE: NOTED		

9/26/16 NOTEBOOKS\1213233-PND Bird Island Design & Permitting\CAD



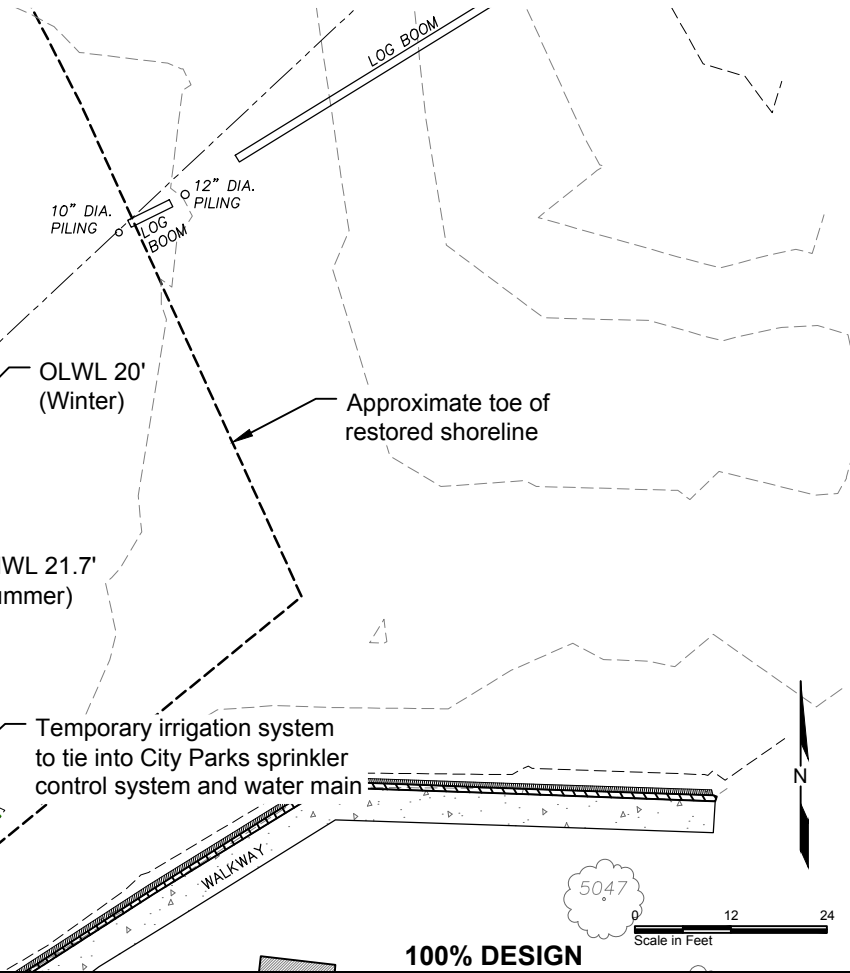
Planting Area	Common Name <sup>1</sup>	Scientific Name	Size	Planting Notes	Proposed Quantity
Zone 1: Lake Fringe Emergent 3,452 sq. ft.	Small fruited bulrush	<i>Scirpus microcarpus</i>	Plugs	Plant plugs at 2 feet on center random pattern	300
	Hardstem bulrush	<i>Carex (Schoenoplectus) acutus</i>	Plugs	Plant plugs at 2 feet on center random pattern	250
	Common spikerush	<i>Eleocharis palustris</i>	Plugs	Plant plugs at 2 feet on center random pattern	160
	Lakeshore sedge	<i>Carex lenticularis</i>	Plugs	Plant plugs at 2 feet on center in drier area near slough	160
<b>Total Plants in Zone 1</b>					<b>870</b>
Zone 2: Slough Emergent Wetland 1,161 sq. ft.	Dagger-leaved rush	<i>Distichlis spicata</i>	Plugs	Plant plugs at 2 feet on center intermix with other species	70
	Slough sedge	<i>Carex obnupta</i>	Plugs	Plant plugs at 2 feet on center intermix with other species	80
	Reed mannagrass	<i>Glyceria grandis</i>	Plugs	Plant plugs at 2 feet on center intermix with other species	70
	Slender rush	<i>Juncus tenuis</i>	Plugs	Plant plugs at 2 feet on center intermix with other species	70
<b>Total Plants in Zone 2</b>					<b>290</b>
Zone 3: Shrub Wetland 4,164 sq. ft.	Sitka willow	<i>Salix sitchensis</i>	Live stakes	Plant plugs at 2 feet on center, random pattern, intermix with other species	530
	Pacific willow	<i>Salix lucida var. lasiandra</i>	Live stakes	Plant plugs at 2 feet on center, random pattern, intermix with other species	530
<b>Total Plants in Zone 3</b>					<b>1,060</b>
Zone 4: Upland Shrub and Tree 3,216 sq. ft.	Snowberry	<i>Symphoricarpos albus</i>	Plugs	Plant plugs at 3 feet on center, random pattern	120
	Salmonberry	<i>Rubus spectabilis</i>	Plugs	Plant plugs at 3 feet on center, random pattern	120
	Clustered rose	<i>Rosa pisocarpa</i>	Plugs	Plant plugs at 3 feet on center, random pattern	120
	Western red cedar	<i>Thuja plicata</i>	Plugs or 1 gal.	Under plant trees where trails have been created and in open spaces per on-site biologist	10
	Douglas fir	<i>Pseudotsuga menziesii</i>	Plugs or 1 gal.	Plant trees in open areas per on-site biologist	10
<b>Total Plants in Zone 4</b>					<b>380</b>
<b>Total of all plants</b>					<b>2,600</b>

<sup>1</sup> If plants are not available, other comparable species can be substituted with approval from WDNR.

**LEGEND**

- Zone 1 - Lake fringe emergent wetland (Phase II)
- Zone 2 - Slough emergent wetland (Phase I)
- Zone 3 - Shrub wetland (Phase II)
- Zone 4 - Upland shrub and tree (Phase I)
- Interplanted conifer (approximate location)
- Existing vegetation
- Temporary irrigation

- Note:**
- Remove all non-natives including *Himalayan Blackberry*, *Tansy Ragwort*, *Reed Canary Grass*, and others. Replace with native species.
  - This shows schematic of proposed temporary irrigation system. This will tie into existing City Parks sprinkler control system and water main.
  - Only zones two and four will be planted during this phase, Phase 1.



1736 Fourth Avenue S., Suite A  
Seattle, Washington 98134  
P: 206.624.1387  
www.pndengineers.com



PND ENGINEERS, INC. IS NOT RESPONSIBLE FOR SAFETY PROGRAMS, METHODS OR PROCEDURES OF OPERATION, OR THE CONSTRUCTION OF THE DESIGN SHOWN ON THESE DRAWINGS. WHERE SPECIFICATIONS ARE GENERAL OR NOT CALLED OUT, THE SPECIFICATIONS SHALL CONFORM TO STANDARDS OF INDUSTRY. DRAWINGS ARE FOR USE ON THIS PROJECT ONLY AND ARE NOT INTENDED FOR REUSE WITHOUT WRITTEN APPROVAL FROM PND. DRAWINGS ARE ALSO NOT TO BE USED IN ANY MANNER THAT WOULD CONSTITUTE A DETRIMENT DIRECTLY OR INDIRECTLY TO PND.

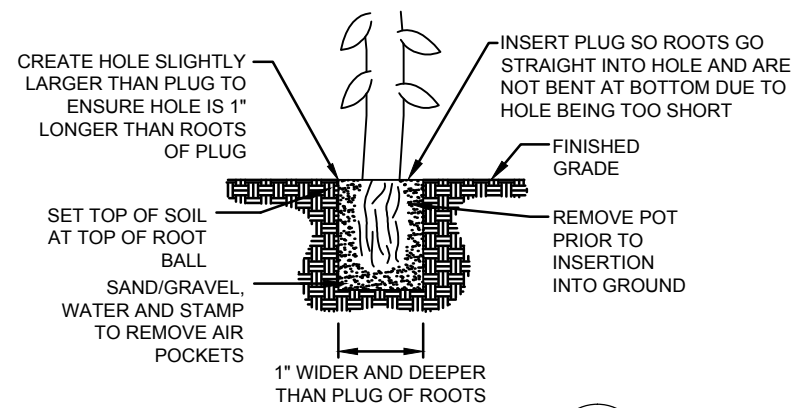
REV	DATE	DESCRIPTION

**PROJECT:** BIRD ISLAND SHORELINE ENHANCEMENT PHASES I AND II

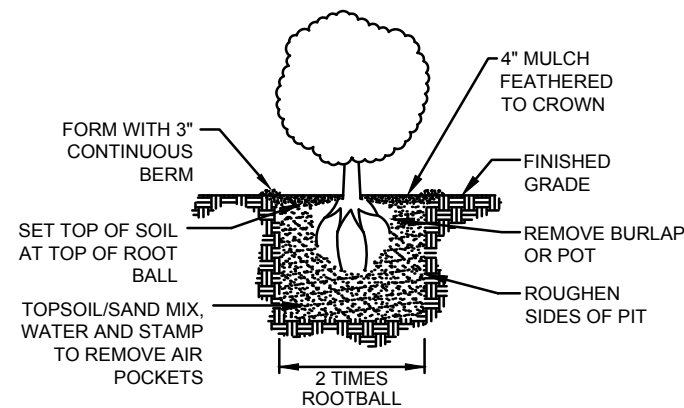
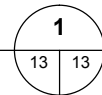
**TITLE:** PLANTING PLAN

DESIGNED BY: JS PROJECT NO: 12132-33 SHEET NO: 12 OF 13  
 DRAWN BY: EAL DATE: OCTOBER 2016  
 CHECKED BY: SCALE: 1" = 12'

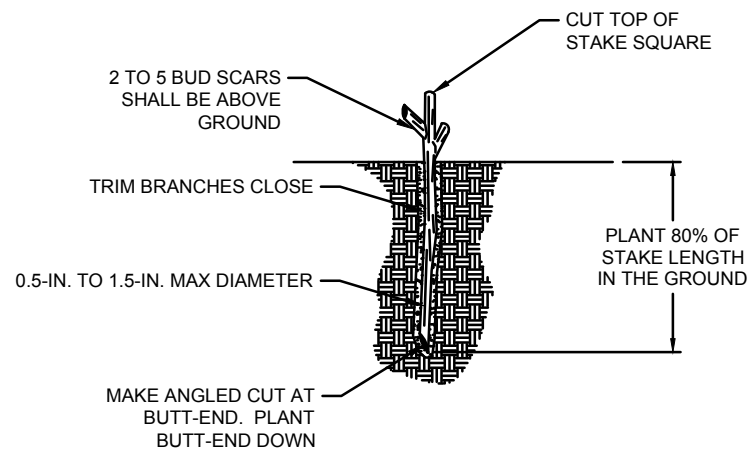
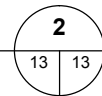
100% DESIGN



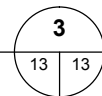
**PLUG PLANTING DETAIL**  
NOT TO SCALE



**1-GALLON PLANTING DETAIL**  
NOT TO SCALE



**LIVE STAKE PLANTING DETAIL**  
NOT TO SCALE



**NOTES:**

1. THE RECOMMENDED TIME FOR PLANT INSTALLATION IS EARLY FALL BETWEEN OCTOBER 1 AND NOVEMBER 15.
2. A PRE-CONSTRUCTION MEETING SHALL BE HELD WITH ALL PARTICIPATING PARTIES PRIOR TO COMMENCEMENT OF WORK IN THE PLANTING AREAS TO REVIEW THE PROJECT GOALS, PLANTING DETAILS, SITE CONDITIONS, CLEARING/EXCAVATION LIMITS, AND CONSTRUCTION SEQUENCING.
3. CONTRACTOR SHALL REMOVE ANY REMAINING INVASIVE SPECIES THROUGHOUT THE PLANTING AREA, INCLUDING BUT NOT LIMITED TO BLACKBERRY, BINDWEED, AND NON-NATIVE GRASSES USING MACHINERY OR BY HAND. ON-SITE SOIL CONTAINING INVASIVE PLANT SPECIES SHALL NOT BE REUSED WITHIN THE PLANTING AREAS.
4. AN APPROXIMATELY 4-INCH-DEEP LAYER OF MULCH SHALL BE PLACED IN A RING AROUND UPLAND PLANTS IN THE AREA ABOVE THE OHW LINE FOR EROSION CONTROL, WEED PREVENTION, AND MOISTURE RETENTION.
5. ALL SOIL AND MULCH SHALL BE CERTIFIED FREE OF MATERIAL TOXIC TO PLANT GROWTH AND NOXIOUS WEED SEEDS.
6. ONLY ZONES TWO AND FOUR WILL BE PLANTED DURING THIS PHASE, PHASE 1.

**PLANT SPECIFICATIONS AND INSTALLATION:**

1. ALL PLANTS AND PLANTING ACTIVITIES SHALL CONFORM TO LANDSCAPE INDUSTRY STANDARDS. PLANT STOCK SHALL BE FREE OF DEFECTS, DISEASE, INFESTATIONS, AND SHALL BE HEALTHY. THE OWNER OR OWNER'S REPRESENTATIVE MAY REQUIRE REPLACEMENT OR SUBSTITUTION OF ANY UNACCEPTABLE PLANTS. PLANT STOCK SHALL BE OBTAINED FROM A NURSERY LICENSED TO SELL PLANTS IN WASHINGTON; PLANT STOCK SHALL BE LOCALLY GROWN IN WESTERN WASHINGTON.
2. THE OWNER OR REPRESENTATIVE SHALL BE PRESENT TO INSPECT PLANTS BEFORE THEY ARE INSTALLED AND THE OWNER CAN REJECT PLANTS IF THEY DO NOT MEET THE INDUSTRY STANDARD. CONTRACTOR SHALL PROVIDE OWNER A COPY OF THE PLANT RECEIPTS THAT INCLUDES THE NUMBER PURCHASED. DURING INSPECTION PLANTS NEED TO BE ORGANIZED TO ALLOW FOR EASY INSPECTION AND COUNT.
3. ALL PLANT STOCK SHALL BE HANDLED WITH CARE TO ENSURE PROTECTION FROM INJURY. PLANTS SHALL BE KEPT MOIST AND STORED IN A SHADED AREA UNTIL INSTALLATION WHILE BEING STORED ON THE PROJECT SITE. BEFORE AND AFTER PLANTING, SOIL IN THE PLANTING PITS SHALL BE SATURATED.
4. FOLLOWING EARTHWORK, THE PLANTINGS SHALL BE INSTALLED PER THE SPECIES, QUANTITIES, SIZES, GROUPING AND SPACING IDENTIFIED IN THE PLANT SCHEDULE.
5. PLANTS SHALL BE INSTALLED IN THE LOCATIONS SHOWN ON PLAN (UPLAND OR RIPARIAN AREAS).
6. ZONES 1, 2, AND 4:
  - a. EXCAVATE PLANTING PITS AS SHOWN IN DETAIL 1. GENTLY LOOSEN ROOTS OF CONTAINERIZED PLANT STOCK PRIOR TO PLANTING.
  - b. BACKFILL PLANTING PITS WITH CERTIFIED WEED FREE TOPSOIL/SAND MIX. NO CHEMICALS SHALL BE ADDED TO THE BACKFILL SOIL.
  - c. WATER EACH PLANT THOROUGHLY AFTER PLANTING IN ORDER TO ELIMINATE AIR POCKETS AND AID IN NATURAL SOIL COMPACTION.
9. ZONE 3:
  - a. HARVEST AND PLANT STAKES DURING THE DORMANT SEASON.
  - b. MAKE CLEAN CUTS AND DO NOT DAMAGE STAKES OR SPLIT ENDS DURING INSTALLATION. USE A PILOT BAR IN FIRM SOILS.
  - c. SOAK CUTTINGS CONTINUOUSLY PRIOR TO INSTALLATION.
  - d. TAMP THE SOIL AROUND THE STAKE.
  - e. ONLY NURSERY GROWN STOCK SHALL BE USED. HARVESTING OF WILD PLANTS IS NOT ACCEPTABLE.
  - f. USE EQUAL NUMBER AND EVEN DISTRIBUTION OF EACH WILLOW SPECIES.
  - g. INSTALL WILLOW PER PLANTING DETAIL 3.

**IRRIGATION AND MAINTENANCE:**

1. CONTRACTOR SHALL PROVIDE IRRIGATION NECESSARY FOR PLANT SURVIVAL ABOVE THE OHW LINE.
2. THE OWNER OR REPRESENTATIVE WILL INSPECT THE IRRIGATION SYSTEM FOR PROPER INSTALLATION AND OPERATION.

100% DESIGN



1736 Fourth Avenue S., Suite A  
Seattle, Washington 98134  
P: 206.624.1387  
www.pndengineers.com



PND ENGINEERS, INC. IS NOT RESPONSIBLE FOR SAFETY PROGRAMS, METHODS OR PROCEDURES OF OPERATION, OR THE CONSTRUCTION OF THE DESIGN SHOWN ON THESE DRAWINGS. WHERE SPECIFICATIONS ARE GENERAL OR NOT CALLED OUT, THE SPECIFICATIONS SHALL CONFORM TO STANDARDS OF INDUSTRY. DRAWINGS ARE FOR USE ON THIS PROJECT ONLY AND ARE NOT INTENDED FOR REUSE WITHOUT WRITTEN APPROVAL FROM PND. DRAWINGS ARE ALSO NOT TO BE USED IN ANY MANNER THAT WOULD CONSTITUTE A DETRIMENT DIRECTLY OR INDIRECTLY TO PND.

REVISIONS		
REV	DATE	DESCRIPTION

PROJECT: <b>BIRD ISLAND SHORELINE ENHANCEMENT PHASES I AND II</b>			
TITLE: <b>PLANTING DETAILS</b>			
DESIGNED BY: JS	PROJECT NO: 12132-33	SHEET NO: 13 OF 13	
DRAWN BY: EAL	DATE: OCTOBER 2016	SCALE: NOT TO SCALE	
CHECKED BY:	SCALE:	NOT TO SCALE	